

Exploring genetic diversity of Napier grass for better livestock production and productivity

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Importance of Napier grass

- East African small-scale livestock production is heavily dependent on Napier grass, particularly in cut-and-carry feeding systems.
- Important characteristics include:
 - High yielding, adaptability to diverse agro-ecologies and resistance to abiotic and biotic stresses; and
 - Soil conservation, insect management strategies, and biofuel crop options.

Molecular profiling of Napier grass

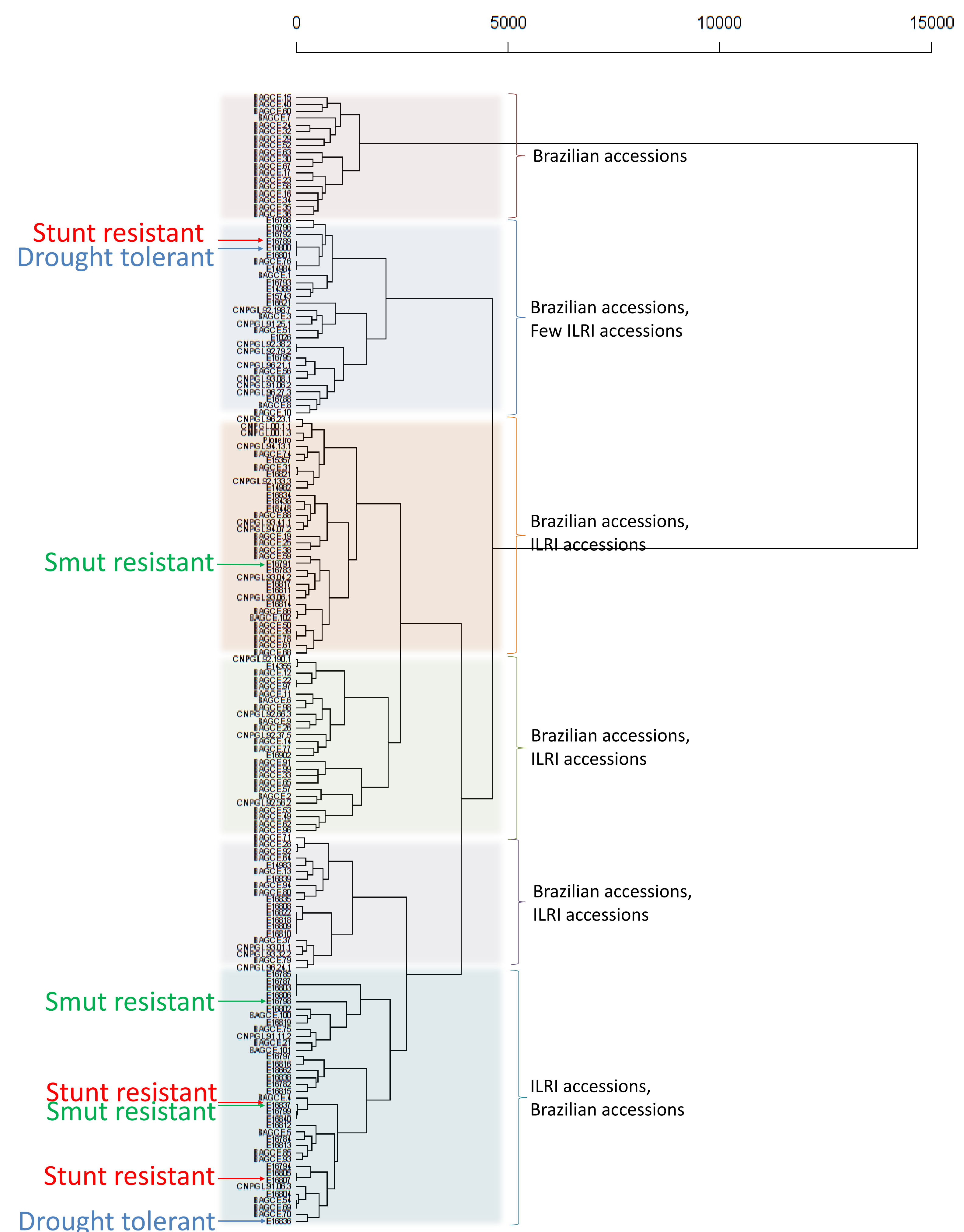
- Assessing genetic diversity of Napier grass is crucial for its enhanced use and conservation.
- Phenotyping studies over the last few decades have identified genotypes with resistance to diseases and tolerance to drought.
- Molecular characterization has identified wide genetic diversity in the collection.
- Further screening will enhance differentiation of genotypes at molecular level and help to identify ways to capture agronomic traits.

Future outlook

- Little information exists on Napier grass at the molecular level.
- This limits the application of molecular approaches for use and conservation of genetic resources.
- Genetic diversity information will be used to locate genomic regions and identify genes controlling important agronomic traits.
- This study will be further supported by a 'genotyping-by-sequencing' approach.



Napier grass collection maintained in ILRI field genebank, Ethiopia



Genetic relationship of Napier grass collection



Use of Napier grass for cut-and-carry feeding system